

REMARKS

Independent claim 10 has been amended to define the movable machine part as a "translatory" movable machine part. Support for this amendment may be found in the original specification on page 1, third full paragraph, as well as on page 5, first paragraph, where a displacement of the movable machine part in the direction of arrow 12 is described.

In addition, independent claim 10 has been amended to define the bore relief recesses as causing hydraulic liquid disposed on the surface of the translatory movable machine part to be dragged from a low pressure region to a high pressure region upon translatory movement of the movable machine part. Support for this amendment may be found in the original specification on page 6, fourth full paragraph. Accordingly, no new matter has been added.

The Examiner has rejected claims 10, 2-3, 5, and 8 under 35 USC 103(a) as being unpatentable over U.S. 5,127,661 to Franson, et al. in view of U.S. 3,656,227 to Weinand. Traverse of this rejection will be based upon the amended claims.

In this rejection, the Examiner states that Franson discloses the invention as substantially as claimed but fails to disclose an inner surface comprising several lubrication bore reliefs and that the recesses each extend in an axial direction from the low pressure side of the U-cup toward the inner sealing lip.

In view of this lack of teaching, the Examiner looks to Weinand for a teaching of the sealing member having a lip (e.g. 114) with the lip having an inner surface (surface having recesses extending from an air side with a radial depth that decreases from the air side to the lip) and concludes it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the inner surface of the lip of Franson to have the recesses as taught by Weinand.

First, it must be recognized that Weinand is directed to a sealing arrangement for a rotating shaft and it is well known that features of the sealing arrangements for a rotating machine parts cannot be transferred to sealing arrangements for translatory movable machine parts. This is true especially for high pressure sealing arrangements as to be used for hydraulic pistons or piston rods, for example, sealing arrangements as can be used for pressures up to 400 bar as stated in the present application.

With regard to Weinand, only low pressure can be applied on the fluid side (left side in Figure 4). If high pressure, e.g. more than 10 bar, was applied the whole seal would collapse because of fluid flowing into a space behind the seal would lead to an extrusion of the seal into the sealing gap. Accordingly, a person skilled in the art would not apply the recesses of Weinand to improve the sealing arrangement of Franson.

In addition, in accordance with the present invention, the recesses do not reach the inner sealing lip, that is, they are spaced apart from the inner sealing lip as

claimed. This is a requirement for building a continuous lubricant film for the translatory movable machine part. This must be contrasted with Weinand which shows the recesses which reach the sealing lip and result in the fact that no continuous lubricant film can be built up as with translatory movable machine parts.

Therefore, the Applicants submit that a prima facie case of obviousness cannot be established for the amended claims on the basis of the Franson, et al. and Weinand patents.

Claims 4 and 6-7 have been rejected under 35 USC 103(a) as being unpatentable over Franson and Weinand as applied to claims 10, 2-3, 5, and 8 and further in view of U.S. 3,189,359 to Haberkorn.

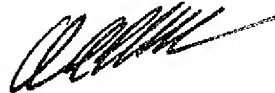
In this rejection, the Examiner states that Franson and Weinand fail to disclose that the outer and inner surface near the abutment surface is convex and therefore looks to Haberkorn for teaching a sealing having a U-shaped abutment surface and inner surface and outer surface adjacent to the abutment surface that are convex and concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine these references.

In response thereto, the Applicant submit that Haberkorn does not fulfill the deficiencies hereinabove set forth with regard to the combination of Franson and Weinand and in as much as claims 4, 6, 7 are dependent claims, a prima facie case of obviousness cannot be established under

35 USC 103(a) on the combination of Franson, Weinand, and Haberkorn. Withdrawal of this rejection is also respectfully requested.

In view of the arguments hereinabove set forth and amendment to the claims, it is submitted that each of the claims now in the application define patentable subject matter not anticipated by the art of record and not obvious to one skilled in this field who is aware of the references of record. Reconsideration and allowance are respectfully requested.

Respectfully submitted,



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